NEW AND SIGNIFICANT RECORDS OF VASCULAR PLANTS FOR FLORIDA AND FOR COLLIER COUNTY AND LEE COUNTY, FLORIDA

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ABSTRACT

Documented records are reported for 89 taxa (81 species, 7 varieties, and one hybrid) from Collier County (31 taxa) and from Lee County (71 taxa), Florida (102 records altogether). A newly discovered hybrid, *Carex gigantea* × *Carex lupuliformis*, is discussed.

KEY WORDS: Florida, native species, alien species, new records, hybrid

RESUMEN

Se realizan las citas documentadas de 89 taxa (81 especies, 7 variedades, y un híbrido) de Collier County (31 taxa) y de Lee County (71 taxa), Florida (102 citas en total). Se discute un híbrido descubierto nuevamente, *Carex gigantea* × *Carex lupuliformis*.

INTRODUCTION

Herein we present new documented records of taxa of vascular plants from Collier County and/or Lee County, Florida, and we also discuss a *Carex* hybrid here reported for the first time in the literature.

Collier County and Lee County occur within the southwestern portion of the Florida Peninsula and border one another from south to north, respectively. These counties encompass 2,026 and 804 square miles, respectively (Southwest Florida Regional Planning Council 2002). They merit especial attention for five reasons.

(1) Gann et al. (2002), who grouped Collier and Lee counties among South Florida's counties, characterized South Florida as "... one of the most biologically diverse regions in North America." They reported over 2,200 species of native and naturalized plants from South Florida, including over 1,400 native species. By contrast, Wunderlin and Hansen (2003) recognized less than twice as many native and nonnative taxa (species, infraspecific taxa, and hybrids) for Florida's 67 counties, overall (i.e., 4,145 taxa). Wunderlin and Hansen (2004) listed the following numbers of taxa for the ten South Florida counties recognized by Gann et al. (2002): Broward Co., 1001; Charlotte Co., 709; Collier Co., 1194; Glades Co., 485; Hendry Co., 493; Lee Co., 1172; Martin Co., 988; Miami-

Dade Co., 1655; Monroe Co., 575, 776 (the mainland portion of Monroe Co. and the Florida Keys, respectively); and Palm Beach Co., 1036.

(2) South Florida extends into the subtropics, thus exhibiting impressive overlap between typically temperate, and characteristically tropical vegetation. Coordinate with their subtropical milieu, at all times of year Collier and Lee counties exhibit particular species in flower.

(3) Both counties manifest intense residential and commercial development. Within extensive areas their floras are being decimated, and increasing numbers of taxa face extirpation or rarity. The Southwest Florida Regional Planning Council (2002) defined Southwest Florida as consisting of six counties, including Collier and Lee counties. From 1950 to 2000, Southwest Florida's share of total U.S. population increased over nine-fold, from 0.047% to 0.429%. Similarly, from 1950 to 2000 Southwest Florida's share of Florida's population increased nearly three-fold, from 2.571% to 7.550%; the latter increase transpired despite the circumstance that Florida's population growth exceeded that of the U. S., overall.

(4) Together with Hawaii, Florida ranks among the two states "...with the most severe nonnative species problems..." (Simberloff 1997). One-third of the South Florida flora consists of escaped, nonnative plants (Gann et al. 2002). Simberloff (1997) stated that two primary factors predispose Florida, particularly southern Florida, to invasion by, and damage from nonnative species: (*a*) "...destruction and disturbance of native habitats and their replacement by novel habitats..." and (*b*) " ...the geographic features of tropicality, insularity, and the great expanse of aquatic habitats." Simberloff (1997) considered the problem of nonnatives to be aggravated by the considerable tourism and transportation into Florida.

(5) No flora has been published for Collier County or Lee County.

Climate

Annually, Collier and Lee counties exhibit a warm rainy season and cooler dry season. During the dry season shallow, rain-fed pools dry up and the land appears drier, overall.

Liudahl et al. (1998) cited data gathered at Fort Myers (Lee Co.)—20 miles north of Collier County—to characterize the climate of Collier County. Thus, those data represent both counties. They indicated annual average temperature of nearly 74° F, and temperatures ranging from an average within the low sixties in January to the low eighties during summer. Average daily maximum temperatures vary from 74.7° F (January) to 91.1° F (August); corresponding daily minimum temperatures for the two months are 53.6° F and 74.1° F.

Frost develops few times, yearly (Liudahl et al. 1998). Collier and Lee counties each exhibit USDA plant hardiness zone nos. 10a and 10b, and Lee County also exhibits zone 9b (these zones represent average annual minimum temperatures of 30°–35° F, 35°–40° F, and 25°–30° F, respectively; Anonymous 2005).

Average annual rainfall exceeds 50 inches. Approximately, two-thirds of rain falls from June to September, when average rainfall is nearly eight inches per month. Monthly average rainfall is less than two inches from November through January and is a little over two inches from February through April (Liudahl et al. 1998).

Geology and soils

Abutting the Gulf of Mexico and belonging to the Atlantic Coastal Plain, both counties exhibit low, flat terrain. They are part of a larger, unnamed, primarily southern and peripheral region of Florida exhibiting maximum elevation of 70 feet above sea level (Schmidt 1997). Physiographic regions prominent within Collier and Lee counties are the Big Cypress Spur, Caloosahatchee Valley, Gulf Barrier Chain and Gulf Coastal Lagoons, Immokalee Rise, Reticulate Coastal Swamps, and the Southwestern Slope (Liudahl et al. 1998; Schmidt 1997). Within each county, outcrops and shallow subcrop rocks are either Pliocene or Pleistocene-Holocene in age (Randazzo & Jones 1997).

Henderson, (1984) and Liudahl et al. (1998) surveyed the soils of both counties. For Collier Co., Liudahl et al. (1998) grouped general soil map units under either of three main headings: (1) urban land and soils in urban areas, (2) soils on the flatwoods and hammocks and in sloughs, and (3) soils on prairies and in swamps and freshwater marshes. For Lee Co., Henderson (1984) grouped major units similarly, but under four main headings: (1) soils of the manmade areas, (2) soils of the flatwoods and sloughs, (3) soils of the swamps and sloughs, and (4) soils of the tidal areas and barrier islands.

Ecosystems and land-use history

Despite their minimal ranges of elevations, both counties, collectively, exhibit diverse ecosystems, e.g., pine flatwoods, scrub, diverse kinds of hammocks, swamps, freshwater marshes, saltwater marshes, mangrove forests, and ruderal sites (Myers & Ewel 1990; Taylor 1998; G. Wilder, pers. obs.).

In addition to development, land use in Collier and Lee counties has entailed these extensive human-induced modifications: construction of drainage canals and of ditches for mosquito control; elimination of, and various alterations of wetlands; cattle ranching; row-crop agriculture; and lumbering. Both counties also maintain major preserves or portions of preserves: Big Cypress National Preserve, Collier Seminole State Park, Corkscrew Regional Ecosystem Watershed, Corkscrew Swamp Sanctuary, Fakahatchee Strand State Preserve, and Everglades National Park. Furthermore, Everglades restoration, currently underway partly within Collier and Lee counties, ranks among the largest of efforts for ecosystem restoration, worldwide.

MATERIALS AND METHODS

We made most collections between and including 2002 and 2005, however, we collected *Limnobium spongia* in 1994 and *Leptochloa nealleyi*, *Paspalum*

distichum, and *Scirpus pungens* in 1998; Appendix). All collections but one were prepared as dried herbarium specimens; *Landoltia punctata* was fixed in aqueous formalin-propionic acid-ethanol solution and stored in aqueous glycerin-ethanol solution. Specimens cited are deposited in the Herbarium of Southwestern Florida (SWF), housed at Florida Gulf Coast University (Fort Myers, FL). We characterize taxa as native, alien, and endemic, according to Wunderlin and Hansen (2003, 2004). Nomenclature for species and infraspecific taxa follows Wunderlin and Hansen (2003), but for several taxa we also provide commonly used synonyms. Family circumscriptions and common names also follow Wunderlin and Hansen (2003), except for Lemnaceae, Nyssaceae, and Asclepiadaceae, which we keep separate from Araceae, Cornaceae, and Apocynaceae, respectively.

The *Atlas of Florida Vascular Plants* (Wunderlin & Hansen 2004) was our principal source for determining whether taxa represented new county or state records. That database does not reference voucher specimens, however, Wunderlin (2002) specified that "Each distribution record on the atlas website is documented by an herbarium specimen or a reliable published source, such as a monograph or revision." We also recognized documented plant records from Austin et al. (1990) and Gann et al. (2002).

There exists a plethora of additional reports and inventories pertaining to the floras of Collier County and Lee County, which do not reference voucher specimens, which are unpublished, and/or which have insufficient circulation. Because of these shortcomings, we do not consider records cited within them as adequately established. As Wunderlin (2002) stated in regard to voucher specimens, if a "...species is not documented...there is no record that the plant ever existed..."

RESULTS AND DISCUSSION

Reported herein are 89 taxa (81 species, 7 varieties, and one hybrid) that represent 31 new documented records for Collier Co. and 71 for Lee Co., Florida (102 records altogether). The hybrid, *Carex gigantea* × *Carex lupuliformis*, is newly discovered and thus a new Florida record.

Asclepias feayi is included here, although it was documented previously. That species was originally collected near Immokalee (Collier Co.) in 1967 (Gann et al. 2002). It is cited here, because those workers designated *A. feayi* as historical in South Florida (including Collier Co.), a designation implying that the species might have been extirpated there.

Muss et al. (2003) published a plant-species list for the Big Cypress National Preserve, which includes portions of Collier, Miami-Dade, and Monroe counties. They listed nine species cited in this article: *Cyperus involucratus*, *Dalbergia sissoo*, *Eleocharis flavescens*, *Ixora coccinea*, *Limnophila sessiliflora*,

Melilotus albus, *Paspalum distichum*, *Reimarochloa oligostachya*, and *Senna alata*, but did not indicate which, if any, records represented Collier County.

The Institute for Regional Conservation (IRC) cites plant records for South Florida, from many sources (Gann et al. 2005). These records as presented by Gann et al. (2005) are undocumented and, therefore, not accepted here. Gann et al. (2005) cited four taxa that we report for Collier Co. (*Eleocharis flavescens*, *Limnophila sessiliflora*, *Melilotus albus*, *Scirpus californicus*) and eight taxa presently listed for Lee Co. (*Asclepias feayi*, *Cirsium nuttallii*, *Commelina gambiae*, *Palafoxia integrifolia*, *Paspalidium geminatum*, *Paspalum conjugatum*, *Phyllanthus amarus*, *Quercus chapmanii*).

Taxonomic data

The 89 taxa represent pteridophytes (1 taxon; 1.1 % of taxa), monocotyledons (44 taxa; 49.4%), and dicotyledons (44 taxa; 49.4%). Numbers of families in each group are: 1 (pteridophytes), 10 (monocotyledons), and 24 (dicotyledons; Appendix).

Families of monocotyledons with the most taxa are Poaceae (21 taxa) and Cyperaceae (15 taxa). Remaining monocotyledonous families each include one taxon. The 36 taxa of Poaceae and Cyperaceae, collectively, constitute 40.4 % of presently reported taxa. This disproportionately high percentage suggests that previous collectors within Collier and Lee counties documented these families insufficiently. Families of dicotyledons with the most taxa are Fabaceae (8), Asteraceae (5), Veronicaceae (5), Euphorbiaceae (4), Brassicaceae (2), and Urticaceae (2). Remaining dicotyledonous families each include one taxon.

Native and Endemic Taxa

Wunderlin and Hansen (2003) classified as native to Florida 48 (53.9%) of the 89 taxa reported here (Appendix). They listed two of our taxa as endemic to Florida (*Asclepias feayi* and *Linum carteri*; Appendix). We consider *Carex gigantea* × *Carex lupuliformis* endemic, as well. In the Poaceae and Cyperaceae, the families most prominently represented in this study, 12 and 10 taxa are native, respectively (i.e., 57.1% and 66.7% of taxa of these families). The present report of a large proportion (ca. one-half) of nonnative taxa accords fairly well with the considerable proportion (ca. one-third) of such taxa indicated previously for South Florida (Gann et al. 2002) and for Florida, overall (Wunderlin & Hansen 2003).

Rare Florida Taxa

The eighty-nine records include a considerable number of rare taxa. Foremost, is *Carex gigantea* × *Carex lupuliformis*, first collected by George Wilder on April 22, 2003. We found that hybrid solely at one station, in Six Mile Cypress Slough Preserve (Lee County). Two years ago, Dr. Anton Reznicek (MICH) annotated three herbarium specimens of this hybrid as "a beautiful intermediate collection" (*Wilder & McCombs* [*W & M*] *17258*, *W & M 17259*, and *W & M 17260*).

Preliminary study revealed three differences between both parental species and the hybrid. (*1*) Perigynia exhibit achenes (both parental species), but are sterile (the hybrid); indeed, sterility is a common feature of hybrids, overall. (2) Relative to spike axes, perigynia extend at, or approximately at right angles (*C. gigantea*), are ascending (*C. lupuliformis*), and have generally intermediate orientations (the hybrid). (3) Spike diameters (excluding perigynium beaks) are narrow (*C. gigantea*), broad (*C. lupuliformis*), and intermediate (the hybrid).

Cayouette and Catling (1992), in their comprehensive review of *Carex* hybrids, referred to "*Carex gigantea* Rudge × *lupulina* Willd. (? *lupuliformis* Sartwell). Possible hybrid origin according to Correll and Johnston (1970)." That language is interpretable in various ways—e.g., to mean the existence of *C. gigantea* × *C. lupuliformis*, however, the latter interpretation is incorrect. Correll and Johnston (1970) (who construed *C. lupuliformis* as a form of *Carex lupulina* Muhl., rather than as a discrete species) actually said of *C. lupuliformis*, that "...these plants seem to show the introgressive influence of *C. lupulina* by *C. gigantea*." Thus, Correll and Johnston (1970) suggested hybrid character of *C. lupuliformis*, overall, not a definite *C. gigantea*/*C. lupuliformis* hybrid.

Carex gigantea × *Carex lupuliformis* was not reported or recorded in *Flora of North America* (Reznicek 2002), in section Lupulinae of the genus *Carex*, nor was it indicated in floristic manuals listing both parental species (Fernald 1950; Gleason 1968; Gleason & Cronquist 1991; Godfrey & Wooten 1979; Mohlenbrock 1999; Small 1933; Wunderlin & Hansen 2003). Some of these workers submerged, or apparently submerged *Carex lupuliformis* into *Carex lupulina* Muhl.

Leptochloa nealleyi and *Kyllinga hyalina* are also unusual in Florida. George Wilder collected *L. nealleyi* on Sanibel Island (Lee Co.), on Aug. 27, 1998 (*W & M 9774*). We know of one other Florida collection of *L. nealleyi*, from Miami-Dade County (*Keith A. Bradley 2583*, Aug. 19, 2004). *Leptochloa nealleyi* was listed by Wunderlin and Hansen (2004), but not by Wunderlin and Hansen (2003).

We collected *Kyllinga hyalina* in Collier County and Lee County, where it is a lawn weed and grows in disturbed areas. Two years ago, Dr. Anton Reznicek (MICH) annotated six of our specimens as "*Cyperus hyalinus* Vahl 2nd U.S. collection" (*W & M 17261* to *W & M 17266*, all of Sept. 8, 2002). (Wunderlin & Hansen [2002] listed *Cyperus hyalinus* Vahl and *Kyllinga hyalina* (Vahl) T. Koyama as synonyms).

Wunderlin and Hansen (2003) ranked 17 presently reported taxa as rare in Florida. We increase that number by two, by including *Carex giantea* × *Carex lupuliformis* and *Leptochloa nealleyi* (taxa which those workers did not consider). Based on data from Wunderlin and Hansen (2003) and on our assessments of these two taxa, the 89 taxa considered here are ranked for Florida, as follows: rare, 19 taxa (21.3% of all 89 taxa); occasional, 48 taxa (53.9%); common, 4 taxa (4.5%); and frequent, 19 taxa (21.3%). Rare and occasional taxa predominate among our

collections—composing, collectively, three-quarters of taxa presently listed. Common and frequent taxa represent, collectively, ca. one quarter of taxa.

Wunderlin and Hansen (2003) listed as rare in Florida the following of our taxa: *Acalypha arvensis*, *Acalypha setosa*, *Achyranthes aspera* var. *pubescens*, *Alysicarpus vaginalis*, *Callitriche pedunculosa*, *Chamaesyce lasiocarpa*, *Commelina gambiae*, *Dalbergia sissoo*, *Heteropogon contortus*, *Ixora coccinea*, *Kyllinga hyalina*, *Leptochloa virgata*, *Linum carteri*, *Paspalum nicorae*, *Senna alata*, *Spigelia anthelmia*, and *Zoysia tenuifolia*. Five of the nineteen taxa designated as rare by Wunderlin and Hansen (2003) and by ourselves, collectively, are native to Florida (Appendix).

For Florida, Coile and Garland (2003) classified *Linum carteri* as endangered and *Tillandsia variabilis* [*Tillandsia valenzuelana* A. Rich.] as threatened.

Gann et al. (2002) considered as rare in South Florida eight species presently listed. They indicated two of these species as extirpated (*Lipocarpha maculata* ["collected once in 1965 near Immokalee"], *Scirpus californicus* ["last collected in 1965 near South Bay in Palm Beach County"]), two species as historical (*Asclepias feayi* ["last collected in 1967 near Immokalee"], *Reimarochloa oligostachya* ["last collected in 1977"]), and four species as critically imperiled (*Leptochloa virgata*, *Nyssa sylvatica*, *Rhynchospora baldwinii*, *Rhynchospora wrightiana*).

We documented Gann et al's (2002) eight taxa from various localities: *Lipocarpha maculata* (Lee Co., 2 localities), *Scirpus californicus* (Collier Co., 1 locality), *Asclepias feayi* (Collier Co., 1 locality; Lee Co., 6 localities), *Reimarochloa oligostachya* (Collier Co., 1 locality), *Leptochloa virgata* (Lee Co., 3 localities), *Nyssa sylvatica* (Lee Co., 1 locality), *Rhynchospora baldwinii* (Collier Co., 1 locality; Lee Co., 1 locality), and *Rhynchospora wrightiana* (Collier Co., 1 locality).

Directions and extents of Range Extensions

Data from Wunderlin and Hansen (2004) indicate that 24 of our taxa represent range extensions southward in Florida: *Acalypha setosa*, *Anthaenantia villosa*, *Callitriche pedunculosa*, *Chasmanthium nitidum*, *Cyperus lanceolatus*, *Dalea carnea* var. *albida*, *Dichanthelium strigosum* var. *leucoblepharis*, *Hemarthria altissima*, *Iris virginica*, *Lindernia dubia* var. *dubia*, *Poa annua*, *Monotropa uniflora*, *Nyssa sylvatica*, *Portulaca amilis*, *Rhynchospora baldwinii*, *Rhyncho-spora filifolia*, *Rhynchospora wrightiana*, *Rumex obovatus*, *Scirpus californicus*, *Solidago canadensis* var. *scabra*, *Sphenopholis obtusata*, *Stylosanthes biflora*, *Urochloa texana*, and *Urtica chamaedryoides*.

Fewer range extensions within Florida are northward (*Leptochloa virgata*), westward (*Ixora coccinea*, *Spigelia anthelmia*), both southward and eastward (*Sida santaramensis*), and both northward and westward (*Kyllinga hyalina*, *Leptochloa nealleyi*).

For each of our taxa except the *Carex* hybrid, we gauged the relative distance between the county (or two counties, collectively) newly represented here and the nearest county indicated by Wunderlin and Hansen (2004). For 60 taxa the newly reported county (or counties, collectively) bordered one or more of the indicated counties. For 21 taxa one or two counties intervened between the newly reported county (or counties, collectively) and the nearest county. For five taxa the number of intervening counties was 3 or 4 (*Iris virginica*, *Callitriche pedunculosa*, *Dalea carnea* var. *albida*, *Stylosanthes biflora*, *Sida santaremensis*). For three taxa between 6 and 8 counties intervened (*Dichanthelium strigosum* var. *leucoblepharis*, *Solidago canadensis* var. *scabra*, *Lindernia dubia* var. *dubia*).

Prognosis for presently discussed taxa

Development and habitat destruction are explosive within Collier County and Lee County, and we anticipate accelerated destruction of taxa and habitat in these counties. Certain localities represented herein have already been destroyed, and the following taxa are now extirpated from one or more localities represented in this paper: *Asparagus aethiopicus*, *Cirsium nuttallii*, *Cyperus sphacelatus*, *Melilotus albus*, *Melilotus indicus*, *Paspalum conjugatum*, *Paspalum notatum* var. *notatum*, *Penstemon multiflorus*, *Polygala verticillata*, and *Urochloa texana*.

APPENDIX

The following list of species, varieties, and a hybrid represent new documented records for Collier County and Lee County, Florida.

Data are presented in the following order after the Latin name of a species, hybrid, or variety: relevant synonym, if any (between brackets); common name; the Wilder and McCombs collection number(s) of voucher specimen(s); habitat(s) where the species was collected; Wunderlin and Hansen's (2003) assessment of frequency of the taxon in Florida; and county(ies) for which the taxon is presently documented. For individual taxa documented for both Collier Co. and Lee Co., collection numbers are indicated in the order listed of these counties. * = alien to Florida; Σ = endemic to Florida.

PTERIDOPHYTE

THELYPTERIDACEAE

**Macrothelypteris torresiana* (Gaudich.) Ching, Mariana Maiden Fern—22,158; damp forest; occasional; Lee

MONOCOTYLEDONS

ALISMATACEAE

Sagittaria latifolia Willd., Broadleaf Arrowhead—22697; damp soil; occasional; Lee

ASPARAGACEAE

**Asparagus aethiopicus* L. [*Asparagus sprengeri* Regel], Sprenger's Asparagus-Fern—20731; scrub; occasional; Collier

BROMELIACEAE

Tillandsia variabilis Schltdl., Leatherleaf Airplant—22194; swamp; occasional; Lee

COMMELINACEAE

**Commelina gambiae* C.B. Clarke, Gambian Dayflower—22522; highly insolated, disturbed land; edge of field; rare; Lee

CYPERACEAE

Σ *Carex gigantea* Rudge × *Carex lupuliformis* Sartwell ex Dewey—19688; swamp; rare; Lee

**Cyperus involucratus* Rottb. [*Cyperus alternifolius* L.], Umbrella Plant—18666; insolated land beneath power lines; occasional; Collier

**Cyperus lanceolatus* Poir., Epiphytic Flatsedge—19847; wetland within insolated, cleared land; insolated land bordering trail; occasional; Lee

**Cyperus sphacelatus* Rottb., Roadside Flatsedge—19715, 18686; bulldozed, insolated land; insolated lawn; occasional; Collier, Lee

Eleocharis flavescens (Poir.) Urb., Yellow Spikerush—20749; along/on shaded trail through damp lowland; frequent; Collier

**Kyllinga hyalina* (Vahl) T. Koyama [*Cyperus hyalinus* Vahl], Peduncled Spikesedge—disturbed land; lawn; 18498, 17265; rare; Collier, Lee

Kyllinga pumila Michx., Low Spikesedge—22033; disturbed land; occasional; Lee

**Kyllinga squamulata* Thonn. Ex Vahl, Asian Spikesedge—18645; pine flatwoods; occasional; Lee

Lipocarpha maculata (Michx.) Torr., American Halfchaff Sedge—18030; insolated wetland beneath power lines; disturbed land (formerly either pine flatwoods or scrub); on trail; occasional; Lee

Rhynchospora baldwinii A. Gray, Baldwin's Beaksedge—19780; wet portion of pine flatwoods; occasional; Collier

Rhynchospora filifolia A. Gray, Threadleaf Beaksedge—19084; periphery of pond; other wetland; frequent; Collier

Rhynchospora grayi Kunth, Gray's Beaksedge—17911; pine flatwoods; occasional; Lee

Rhynchospora wrightiana Boeck., Wright's Beaksedge—19812; along firebreak through pine flatwoods; occasional; Collier

Scirpus californicus (C.A. Mey.) Steud., Giant Bulrush—16332; edge of pond; occasional; Collier

Scirpus pungens Vahl, Threesquare Bulrush—9790, 19209; insolated wetland; roadside; frequent; Collier, Lee

HYDROCHARITACEAE

Limnobium spongia (Bosc) Rich. ex Steud., American Spongeplant—7392; occasional; in canal; Lee

HYPOXIDACEAE

Hypoxis curtissii Rose, Common Yellow Stargrass—20142; swamp; common; Lee

IRIDACEAE

Iris virginica L., Virginia Iris—18207; insolated depression along road; occasional; Lee

LEMNACEAE

**Landoltia punctata* (G. Mey.) Les & D. J. Crawford, Dotted Duckweed—shallow water; frequent; Lee

POACEAE

Anthaenantia villosa (Michx.) P. Beauv., Green Silkyscale—19282; pine flatwoods; frequent; Lee

**Bothriochloa ischaemum* (L.) Keng, King Ranch Bluestem—19118; pasture; occasional; Lee

Cenchrus gracillimus Nash, Slender Sandbur—19178, 21335; along dirt road through bulldozed land; strand vegetation by Gulf of Mexico; frequent; Collier, Lee

Chasmanthium nitidum (Baldwin) Yates, Shiny Woodoats—22291; Hammock; occasional; Lee

Dichanthelium strigosum var. *leucoblepharis* (Trin.) Freckmann—19364; edge of trail through open woodland; occasional; Lee

**Hemarthria altissima* (Poir.) Stapf & C. E. Hubb., Limpograss—20728; edge of pond; occasional; Collier

Heteropogon contortus (L.) P. Beauv. ex Roem. & Schult., Tanglehead—19467; pine flatwoods; along railroad tracks; rare; Lee

**Leptochloa nealleyi* Vasey, Nealley's Sprangletop—9774; disturbed land on Sanibel Island; rare; Lee

Leptochloa virgata (L.) P. Beauv., Tropical Sprangletop—22364; damp depression along road; rare; Lee

Panicum anceps Michx., Beaked Panicum—22126; wet prairie; pine flatwoods; on trail; common; Lee

Paspalidium geminatum (Forssk.) Stapf, Egyptian Paspalidium—22686; insolated wetland; occasional; Lee

Paspalum conjugatum P.J. Bergius, Sour Paspalum—21578; hammock; recently bulldozed, highly insolated land; along dirt road; occasional; Lee

Paspalum distichum L., Knotgrass—9787; disturbed land; occasional; Collier

**Paspalum nicorae* Parodi, Brunswickgrass—21583; pine flatwoods; rare; Lee

**Paspalum notatum* Flugge var. *notatum*, Bahiagrass—21370; bulldozed, highly insolated land; occasional; Lee

**Poa annua* L., Annual Bluegrass—19550, 19554; lawn; shaded, bare earth bordering sidewalk; frequent; Collier, Lee

Reimarochloa oligostachya (Munro ex Benth.) Hitchc., Florida Reimargrass—21136; meadow; occasional; Collier

**Secale cereale* L., Cultivated Rye—22847; bulldozed, highly insolated land; occasional; Lee

Sphenopholis obtusata (Michx.) Scribn., Prairie Wedgescale—19594; field; frequent; Lee

**Urochloa texana* (Buckley) R. D. Webster, Texas Signalgrass - 19633; bulldozed, highly insolated land; occasional; Lee

**Zoysia tenuifolia* Willd. ex Thiele, Manila Templegrass—19638, 22397; disturbed land; rare; Collier, Lee

DICOTYLEDONS

ACANTHACEAE

**Thunbergia fragrans* Roxb., Whitelady—22253; disturbed hammock, edge of field; occasional; Lee

AIZOACEAE

Sesuvium maritimum (Walter) Britton et al., Slender Seapurslane—21161; insolated trail; occasional; Coll.

AMARANTHACEAE

**Achyranthes aspera* var. *pubescens* (Moq.) C. C. Towns., Devil's Horsewhip—21102; oak-Sabal hammock within Caloosahatchee River Regional Park; rare; Lee

ASCLEPIADACEAE

Σ *Asclepias feayi* Chapm. ex A. Gray, Florida Milkweed—17874; scrub, on/along trails through pine flatwoods, grassy portion of pineland remnant, disturbed land (formerly, apparently pine flatwoods); occasional; Lee

ASTERACEAE

Cirsium nuttallii DC., Nuttall's Thistle—16631; lawns (including tree lawn); frequent; Lee

**Cyanthillium cinereum* (L.) H. Rob. [*Vernonia cinerea* (L.) Less.]—18454; along/on dirt road; occasional; Collier

Palafoxia integrifolia (Nutt.) Torr. & A. Gray, Coastalplain Palafox—22101; field; pineland; frequent; Lee

Solidago canadensis L. var. *scabra* (Muhl. ex Willd.) Torr. & A. Gray—18432, 17315; median strip of I 75; along road; wet prairie; shallow water; frequent; Collier, Lee

**Taraxacum officinale* Weber ex F. H. Wigg. [including *Taraxacum laevigatum* (Willd.) DC]—19682, 18787 (red-fruited and brown-fruited formas, respectively); occasional; Lee

BRASSICACEAE

**Coronopus didymus* (L.) Sm., Lesser Swinecress.—20394, 20397; highly insolated dirt pile; lawn weed; occasional; Collier, Lee

Descurainia pinnata (Walter) Britton, Western Tansymustard—20401; tree lawns along main roads; common; Lee

CALLITRICHACEAE

**Callitriche pedunculosa* Nutt., Nuttall's Waterstarwort—22289; damp soil in shallow depression situated within cleared land beneath power lines; rare; Lee

ERICACEAE

Monotropa uniflora L., Indianpipe—16699; shaded portion of scrub; occasional; Collier

EUPHORBIACEAE

**Acalypha arvensis* Poepp., Threeseed Mercury - 17225; disturbed land by creek; rare; Lee

**Acalypha setosa* A. Rich., Cuban Copperleaf—18821; shrub bed within supermarket parking lot; rare; Lee

**Chamaesyce lasiocarpa* (Klotzsch) Arthur, Roadside Sandmat—19225; field; tree lawn; insolated wasteland; crack in pavement; rare; Lee

**Phyllanthus amarus* Schumach. & Thonn., Gale-Of-Wind—21947; insolated, recently bulldozed land of median of road; occasional; Lee

FABACEAE

**Alysicarpus vaginalis* (L.) DC., White Moneywort—18939; insolated, dry substrate of median of road; land by intersection; rare; Lee

**Dalbergia sissoo* Roxb. ex DC., Indian Rosewood—21427; along railroad tracks; rare; Collier

Dalea carnea var. *albida* (Torr. & A. Gray) Barneby, Whitetassels—17934; pine flatwoods; occasional; Lee

**Melilotus albus* Medik., White Sweetclover—16471; field; frequent; Collier

**Melilotus indicus* (L.) All., Indian Sweetclover—19022, 16905; bulldozed land; insolated dirt pile; occasional; Collier, Lee

Mimosa quadrivalvis L., Sensitive Brier—17883; field; frequent; Lee

**Senna alata* (L.) roxb., Candlestick Plant—19040, 16469; disturbed land; by power lines; construction site; rare; Collier, Lee

Stylosanthes biflora (L.) Britton et al.– 22524; bordering, and extending into ditch; occasional; Lee

FAGACEAE

Quercus chapmanii Sarg., Chapman's Oak.—17198; scrub; pineland; edge of disturbed forest; frequent; Lee

ITEACEAE

Itea virginica L., Virginia Willow—20580; forest by creek; common; Lee

LINACEAE

Σ *Linum carteri* Small, Carter's Flax—16958; field; rare; Lee

MALVACEAE

**Sida santaremensis* Monteiro, Moth Fanpetals—20781; edge of field; occasional; Collier

MORACEAE

Morus rubra L., Red Mulberry—19757; hammock, disturbed land; frequent; Lee

NYSSACEAE

Nyssa sylvatica Marshall, Tupelo—20834; shore of pond; frequent; Lee

POLYGALACEAE

Polygala verticillata L., Whorled Milkwort—22279; edge of field; occasional; Lee

POLYGONACEAE

**Rumex obovatus* Danser, Tropical Dock—16909, insolated land by canal; dried-up ditch; weedy sod; occasional; Lee

PORTULACACEAE

**Portulaca amilis* Speg., Paraguayan Purslane—20769, 21705; edge of insolated, bulldozed land; lawn weed; frequent; Collier, Lee

RUBIACEAE

**Ixora coccinea* L., Scarlet Jungleflame—21085; natural land; rare; Collier, Lee

STRYCHNACEAE

Spigelia anthelmia L., West Indian Pinkroot—21232; insolated gravel and bulldozed land; tree lawn; meadow; rare; Collier; Lee

URTICACEAE

**Pouzolzia zeylanica* (L.) Benn., Pouzolz's Bush—21259; disturbed land along road; insolated dump; occasional; Lee

Urtica chamaedryoides Pursh, Heartleaf Nettle.—21263; lawn weed; occasional; Lee

VERBENACEAE

**Verbena brasiliensis* Vell., Brazilian Vervain—19764; depression by intersection; dried-up, barren portion of lawn; occasional; Lee

VERONICACEAE

**Limnophila sessiliflora* Blume, Asian Marshweed—21181; damp substrate along canal; occasional; Collier

Lindernia dubia var. *anagallidea* (Michx.) Cooperr., Yellowseed False Pimpernel.—21196; damp trench through insolated, bulldozed land (growing together with the following variety); occasional; Lee

Lindernia dubia (L.) Pennell var. *dubia*—21199; damp trench through insolated, bulldozed land; occasional; Lee

Penstemon multiflorus (Benth.) Chapm. ex Small, Manyflower Beardtongue—22283; scrub; field; frequent; Lee

**Russelia equisetiformis* Schltdl. & Cham., Fountainbush—19970; disturbed land; occasional; Collier

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